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RECORD OF ORAL HEARING
UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KAZUHITO YANADORI

Appeal 2007-2852
Application 10/691,583
Technology Center 1700

Oral Hearing Held: November 6, 2007

Before EDWARD C. KIMLIN, CHUNG K. PAK, and
LINDA M. GAUDETTE, Administrative Patent Judges

ON BEHALF OF THE APPELLANT:

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1 The above-entitled matter came on for hearing on Tuesday,
2November 6, 2007, commencing at 3:05 p.m., at The U.S. Patent and
3Trademark Office, 600 Dulany Street, Alexandria, Virginia, before Deborah
4Rinaldo, RPR, Notary Public Registration No. 292810.

5 JUDGE KIMLIN: Good afternoon, Mr. Folker. You can begin
6when you are ready. You have about 20 minutes.

7 MR. FOLKER: That should be plenty. My name is Jim Folker
8and I'm here to represent the applicant in this case.

9 And the invention in this case is a power-steering hose. And
10the basic design of it is three rubber layers, an inner layer and an outer layer
11and an intermediate layer. And alternating with those three rubber layers are
12two reinforcing layers. The reinforcing layers are made of twisted cords.
13That's the key to the invention is, I think, the reinforcing layers.

14 The inventor's objective was to suppress the noise vibration that
15could be conveyed to the passenger compartment by the power-steering hose
16via the steering wheel. But on the flip side of that, they also wanted to make
17sure that the hose was still durable enough to last.

18 So in order to enable them to do that, they came up with some
19criteria for the reinforcing layers. There's three criteria. The first one is that
20the intermediate elongation under a certain load is between 2.2 and 5
21percent. And the elongation at the break is between 8 and 19 percent. And
22the third criteria is the number of twists. It's between 15 and 30 over a ten-
23centimeter length.

24 In this case claims 1, 4 and 6 were a 103 rejection and they are
25rejected over one patent, Randall, and a secondary reference to Ikeda. And
26the Randall reference relates to a hydraulic breaking hose which conveys
27brake fluid. It doesn't mention that it's related to a power-steering fluid hose.

1 The applicants have told me that this is an important difference
2because power-steering fluid creates different demands on the hose than the
3brake fluid does on the hose. One of the more important things is that the
4power-steering fluid is pulsed through the hose, whereas, according to my
5understanding, the brake fluid is not.

6 The examiner acknowledged that Randall lacks the two claimed
7elongations, the range for the intermediate elongation and the range for the
8elongation at the break.

9 So the examiner relied on a secondary reference to Ikeda. And
10Ikeda generally mentions that it's a hydraulic hose, but it doesn't particularly
11mention that it's a power-steering hose. It also doesn't mention the number
12of twists of the cords in the reinforcing layers.

13 And applicants submit that Ikeda lacks the claimed elongation
14range between 2.2 and 5 percent. It recites an elongation value using
15different units under a different load of 2.7 percent plus or minus 1 percent.
16And when that's converted to the same load as in the claim and to the same
17units as in the claim, that comes out to be .6 percent plus or minus .2
18percent.

19 JUDGE GAUDETTE: I guess your calculations appear to be
20based on the assumption that you've got this linear relationship. Is that
21necessarily true if you use a different load?

22 MR. FOLKER: I think they based it on a curve, but --

23 JUDGE GAUDETTE: A linear S curve?

24 MR. FOLKER: I think that must be it. I was relying on the
25client's expertise in that area for the conversion.

26 JUDGE GAUDETTE: But there is no declaration in there
27regarding those calculations, right?

1 MR. FOLKER: We don't have a declaration.

2 JUDGE GAUDETTE: Was that ever presented to the examiner
3prior to the reply brief? Actually, it might have been in your main appeal
4brief. I'm sorry. It was. Your arguments regarding the unexpected results, I
5think, are in the reply.

6 MR. FOLKER: I'll see if it was in the main appeal brief.

7 JUDGE GAUDETTE: I didn't notice where the examiner
8actually addressed the calculations.

9 MR. FOLKER: I don't believe that he did. I think he made a
10more general argument, which I'll address in a couple minutes, about
11optimizing to get the required range. If we need to, I think the client could
12provide a declaration regarding the calculations. We could see how this
13turns out.

14 JUDGE GAUDETTE: Was there any testing done of the
15claimed power-steering hose using the load that was utilized in the
16reference?

17 MR. FOLKER: The load in the Ikeda reference? Not that I'm
18aware of. They haven't told me that they have. This case was transferred to
19our law firm from another law firm. So they actually wrote the brief.

20 So we picked this up a little bit late in the game. But I could
21look into that declaration and the testing also. As far as I know, neither of
22those two things have been presented to the examiner.

23 JUDGE KIMLIN: Is there a relationship between the number
24of twists and the elongation of the cords or are they separate and distinct
25properties?

26 MR. FOLKER: I think -- I'm not sure. I believe that they are
27related, but I don't know what type of relationship, whether it would be a

1linear relationship or exponential or inverse. I doubt it's inverse, but I'm not
2sure exactly.

3 So as we were talking about the Ikeda reference for that
4intermediate elongation range, it is much lower .4 percent to .8 percent,
5which is much lower than our claimed range of 2.2 percent to 5 percent
6when the balancing the loads and bringing the units into agreement.

7 JUDGE KIMLIN: That's assuming, of course, it's an accurate
8extrapolation.

9 MR. FOLKER: Exactly.

10 JUDGE GAUDETTE: Let me ask another question. In Ikeda it
11talks about the tensile strength and elongation, et cetera, being of the
12reinforced thread. Is that different than the actual braided layer?

13 In other words, your claims talk about the twisted cords having
14a certain elongation. And so I'm wondering if you are comparing the same
15two things.

16 MR. FOLKER: Ours is the actual -- like a cylinder and theirs is
17just the cords. Theirs may be the cords themselves.

18 JUDGE GAUDETTE: So are they actually testing the cords,
19the twisted cords in getting those numbers, intermediate elongation, et
20cetera? Is Ikeda doing the same thing or is Ikeda just talking about the
21threads prior to them being braided or bound?

22 MR. FOLKER: From my understanding Ikeda was talking
23about the -- not just the threads on their own, the threads being braided or
24woven together.

25 JUDGE GAUDETTE: It says the reinforced thread. Thread
26layers for braiding the thread.

27 MR. FOLKER: Column 2, I do see -- in column 2 and column

13, I do see they are talking about the thread. And we were basing our
2arguments on that because I think that's really all the detailed information of
3these elongation ratios we have.

4 So I think that in one sense that supports our position a little --
5even stronger for us because if they are measuring a different value, then we
6don't really have any data to get -- to obtain our claimed ranges.

7 JUDGE GAUDETTE: What is your position on -- regarding
8the fact that those would be, I guess, a result effective variable where it's just
9a matter of optimizing? That's really the examiner's contention, I think.

10 MR. FOLKER: Yes. In response to that, we would like to
11point out that our invention relates to a power-steering hose and the primary
12reference relates to a brake-fluid hose and the secondary reference is very
13broad. It doesn't say what type of hose.

14 JUDGE GAUDETTE: I was going to say the primary reference
15is 1957. Did they have power steering then? I don't even know.

16 JUDGE KIMLIN: Actually, yes.

17 MR. FOLKER: Offhand I don't know either.

18 JUDGE KIMLIN: My dad's old '59 Buick did.

19 JUDGE GAUDETTE: Oh, it's '58, I'm sorry.

20 MR. FOLKER: In response to the optimization argument, we
21were going to say that the power-steering hose is a different product than the
22brake-fluid hose. So you would be optimizing them for different -- to obtain
23different goals because there is a different type of fluid going through. As I
24mentioned before, the pulsed fluid of the power-steering hose is -- creates
25different demands.

26 JUDGE GAUDETTE: Right. But would the characteristics
27that you are optimizing still be -- the relationship still be applicable? In

1other words, they talk about when fatigue resistance improves, then maybe
2volume expansion decreases. Isn't that still applicable in both contexts?

3 MR. FOLKER: In our case, in the calculations that I have, they
4weren't as concerned with volume expansion. They were more concerned
5with transferring -- suppressing vibrations. So I think suppressing vibrations
6and durability of the hose.

7 So durability of the hose does overlap in both cases. But I think
8the difference is the brake fluid hoses, the Ikeda hose, they were concerned
9about minimizing volume expansion. And we were concerned about
10minimizing the vibration transference.

11 So we're optimizing for different purposes. So I think the
12optimization will end up with different results, as we've seen by those
13different numbers for the elongation, the intermediate elongation range.

14 JUDGE PAK: Counsel, is volume expansion related to
15vibration as well?

16 MR. FOLKER: I imagine there is some correlation. I don't
17know what the relationship would be, like what kind of formula would
18correlate the two.

19 One thing that I would like to point out that is not in the briefs
20is the Ikeda reference, in order to achieve their goal of minimizing the
21volume expansion, teaches away from going above 3.7 percent for the
22intermediate elongation which would convert to be, assuming our formula is
23correct, would be .82 percent.

24 So they teach away from going above .82 percent, whereas the
25lower limit of our claimed range is 2.2 percent. Our claimed range goes
26from 2.2 to 5 percent. So I think that's a significant difference between the
27two values.

1 JUDGE KIMLIN: Let me ask you, if one made a hose, say a
2brake hose or radiator hose that had the claimed structure, would it infringe
3this claim to a power-steering hose? Is a hose a hose is a hose?

4 MR. FOLKER: If it had all the elements of the claim, yes, I
5would say it would. All the elements including the ranges, the elongation
6ranges that we talked about.

7 JUDGE KIMLIN: So the introductory language is more a
8statement of intended use.

9 MR. FOLKER: Yeah. I think the introductory language only
10really comes into play in this case is because of the optimizing. I think we
11were optimizing it for one product, for the power-steering hose.

12 And the references -- the primary reference is definitely related
13to a brake-fluid hose. And the secondary reference doesn't mention that it's a
14power-steering hose. And our clients have told us that from the
15characteristics of it, it doesn't appear to be a power-steering hose. They said
16it appears to be some other type of hose, possibly a brake-fluid hose.

17 And it is similar to -- they said that the hose in Ikeda wouldn't
18have the required -- wouldn't have the required vibration suppression that
19they were looking for.

20 So I think we actually covered everything. There is only one
21independent claim in this case. And I think I've covered everything I have
22for the main rejection under Randall and Ikeda. Was there any more
23questions on that?

24 JUDGE KIMLIN: That should do it.

25 MR. FOLKER: I was just going to very briefly talk about the
26second rejection of claims 5 and 7 under Randall, Ikeda and Kuribayashi.

27 We would just first like to point out that Kuribayashi, the third

1reference, doesn't remedy the deficiencies that we talked about, about the
2ranges, the elongation ranges. It was primarily relied on for a statement in
3the Kuribayashi reference that it had double twist cords.

4 But I believe that the manner of the double twist cords in
5Kuribayashi is different than the way our cords are twisted in the claim 5.

6 Using claim 5, we have a plurality of cords that themselves are
7twisted and then the twisted cords are twisted together. Kuribayashi doesn't
8say too much about the double twist, but we believe that it's just twisted --
9there is like a primary twist and a secondary twist on the same cords, but that
10multiple cords aren't twisted together.

11 And the only other thing I would like to point out on this
12argument is regarding claims 5 and 7 that in, I believe our reply brief, we
13discussed about a fourth reference Inada. And the examiner clarified that in
14his supplemental answer. That was just a typographical error. So that
15reference doesn't play into the rejection at all.

16 So I believe I'm through. Is there any more questions?

17 JUDGE KIMLIN: That's it.

18 MR. FOLKER: Thank you.

19 JUDGE KIMLIN: Thank you for coming.

20 (Whereupon, the proceedings at 3:25 p.m. were concluded.)